

and illustrate most excellently the visible effects of interaction between cells, which is a point of particular interest especially in relation to the expression of such characters as leaf-shape. The evidence that *S. Darwinianum* is a true fusion hybrid is not given. All this data is certainly well known by the authors, as is indicated by the discussion on page 148, but the treatment is hardly clear to one not already fully acquainted with the literature of the subject.

The bibliography includes no reference later than 1912, and in the list of books on plant-breeding there are some noticeable omissions of which we may mention Cramer's *Kritische Übersicht der bekannten Falle von Knospenvariation* published in 1907 and the recent volume by de Vries entitled *Gruppenweise Artbildung*.

The reviewer is in full sympathy with the purposes of the volume, with the excellent selection of the subject matter, and the interesting presentation which gives to volumes of this kind a well-deserved popularity.

The defects of the volume are those that are common to American text-books and popular treatments of scientific subjects. It seems to be the rule that the presentation must be simple and definite with little if any critical analysis of facts and theories, a treatment which gives an unwarranted air of finality and authority not in harmony with the subject itself and not stimulative to an attitude of inquiry on the part of the average reader.

A. B. S.

Illick's Pennsylvania Trees*

This is an excellently conceived book of 231 pages, of which the first 52 pages, Part I, "is intended for the layman and the beginner of forestry" and "comprises abstracts from the author's lectures on elementary forestry at the Pennsylvania State Forest Academy." This part is neatly and comprehensively illustrated by numerous photographs and drawings, and constitutes a simple and compact treatment as to general considerations of the economic value, natural and artificial development, and eco-

* Pennsylvania Trees, by J. S. Illick, professor of dendrology and forest management, Pennsylvania State Forest Academy. Bull. No. 11, Penn. Dept. Forestry, Harrisburg, Pa., 1914.

logical relations of the forests of the state, as well as a very serviceable treatise on the morphology of a tree with particular reference to the use of the systematic part of the book.

Part II, pages 53-223, is a "Manual of Pennsylvania Trees" and comprises a discussion on the identification of trees and a description of families, genera, and species, with accompanying keys. For each of the 126 species treated there is a full-page plate containing excellent line drawings of a shoot with flowers, another with fruit, another in the winter condition, with a larger figure of individual buds, and often other detail figures. The page of text accompanying this plate treats of the species briefly under the following heads: Form, Bark, Twigs, Buds, Leaves, Leaf-scars, Flowers, Fruit, Wood, Distinguishing Characteristics, Range, Distribution in Pennsylvania, Habitat, and Importance of the Species. To the present reviewer this part of the book deserves great praise. The typography is good, the proof-reading has been carefully done, the nomenclature is that of Gray's Manual (seventh edition). It is perhaps to be regretted that the author uses a comma between the specific name and its author.

Under the heading "Distribution in Pennsylvania," however, there is a lack of accuracy which to the 120 members of the Botanical Society of Western Pennsylvania, and to the many other amateur botanists and teachers in western Pennsylvania, will cause considerable confusion. In the Pennsylvania Herbarium of the Carnegie Museum there are now, thanks to the activities of the Botanical Society and of the Museum and its friends, about 50,000 specimens, representing more or less completely all of the counties of the western and many of those of the central part of the state. There is a fair proportional number of tree specimens among these and, inasmuch as Professor Illick notes, in his preface, that "Special efforts are being put forth to ascertain the distribution more accurately," it may be of interest to note, as authenticated by specimens in the Carnegie Museum, the following occurrences of trees in western Pennsylvania outside of the range given for them in *Pennsylvania Trees*:

Quercus Muhlenbergii Engelm. Noted in *Pennsylvania Trees* as "found locally in the southeastern and southern parts." Has been found in Beaver and Lawrence counties in the western part of the State.

Quercus prinoides Willd. Noted as "locally in the eastern, southern and central parts of the state." Occurs in fine condition just north of Valencia, Allegheny County, where the plants fruit abundantly.

Quercus imbricaria Michx. Noted as occurring "locally west of the Alleghenies as far north as Indiana County" and we have found it in southern Butler County and in Clearfield County in the valley of the north branch of the Susquehanna River, west of Clearfield.

Quercus ilicifolia Wang. Noted as sparse in the north-central and northern parts, occurs abundantly on the uplands between Clearfield and Pottersdale.

Quercus macrocarpa Michx. Noted as "Rare or local in the eastern, southern, and western parts of the state. Not reported from other parts." Of this there is a specimen with characteristic acorn, an old twig with battered leaves, and a flowering twig. "Centre Co., June 9, 1868. Tree between Centre Furnace and Thompson's Mill. J. T. R[othrock]."

The statement that the White Oak is "Abundant throughout the eastern, central, and southern parts, and rather common, at least locally, in the northern and western parts," will perhaps not quite suit the botanists of the southwestern sixth of the state where the white oak forms the main part of the forests of the uplands and hill tops over large areas.

Morus rubra L. Noted as "Local and sparse in the eastern and southern parts, occasional in the central part and rare in the mountainous parts." Has been collected in Allegheny, Westmoreland, and Blair counties.

Magnolia acuminata L. Noted as "Recorded as far east as Lancaster county and as far west as Forest and Allegheny counties." Occurs abundantly in Erie, Crawford, Mercer, Washington, and Green counties along the western boundary of the state.

Aesculus glabra Willd. To the list of counties noted should be added Washington. (Hanlin. *O. E. Jennings*, 1908.)

Tilia heterophylla Vent. Noted as "Not known to occur in the western part." Is represented by a specimen from Charleroi, Washington County, *O. E. Jennings*, June 9, 1904. Leaves white beneath with a fine stellate pubescence.

Oxydendrum arboreum (L.) DC. Noted as "found only sparingly in the southeastern part of the state." Dr. J. A. Shafer and O. P. Medsger collected this tree in Westmoreland County, "Mt. Pleasant Twp., field near Brush Creek. July 19, 1900."

Fraxinus nigra Marsh. Noted as "Common in the eastern, southern central and western parts." But the present reviewer has botanized rather extensively in southwestern Pennsylvania and it can be stated positively that this species is *rare* in that part of the state. It occurs in great abundance in Crawford County, is common in Erie, occurs in Beaver and Armstrong counties, and is represented by specimens collected a number of years ago in Allegheny County, otherwise we know of no records for western Pennsylvania.

O. E. JENNINGS

CARNEGIE MUSEUM,
February 8, 1915

PROCEEDINGS OF THE CLUB

FEBRUARY 9, 1915

The meeting of February 9 was held at the American Museum of Natural History at 8:15 P.M., President Harper presiding. Fifty persons were present.

There being no business the President announced the lecture of the evening, "A Phytogeographic Trip in the Himalayas," by Mr. Ralph R. Stewart. An abstract prepared by the speaker follows:

"The ground covered by my trips extends from Rawalpindi in the Punjab to Kashmir, thence to Leh and Himis in Western Tibet (Ladak) and south to Simla, via Rupshu, Lahoul and Kulu. The distance is about 900 miles. As the range of altitude is three miles there are great variations in the flora from tropical to